

Opmerkingen: Zie §3.2.4, blz. 104 t/m 105, voorbeeld 7

Antwoorden:

a. $(y, z) = (0, 0)$

b. $I_{yy} = 281667 \text{ mm}^4$

$$I_{zz} = 256667 \text{ mm}^4$$

c. $I_{zz} = 18,027 \times 10^9 \text{ mm}^4$

d. $I_{zz} = 5,926 \times 10^{12} \text{ mm}^4$; 99,7%

Toelichting:

Alle maten in mm

b. $I_{yy} = \left\{ \frac{1}{12} \times 5 \times 70^3 \right\} + 2 \times \left\{ \frac{1}{12} \times 45 \times 5^3 + 45 \times 5 \times 17,5^2 \right\} = 281667 \text{ mm}^4$

$$I_{zz} = 2 \times \left\{ \frac{1}{12} \times 5 \times 40^3 \right\} + 2 \times \left\{ \frac{1}{12} \times 40 \times 5^3 + 40 \times 5 \times 22,5^2 \right\} = 256667 \text{ mm}^4$$

c. $I_{zz} = 2 \times \left\{ \frac{1}{12} \times 2 \times 2600^3 \right\} + 2 \times \left\{ 1800 \times 2 \times 1300^2 \right\} = 18,027 \times 10^9 \text{ mm}^4$

d. $I_{zz} = I_{zz;\text{koker}} + \left\{ 12 \times I_{zz;\text{verstijver}} \times 1275^2 \right\} + \left\{ 4 \times I_{yy;\text{verstijver}} \times 800^2 \right\} + \left\{ 4 \times I_{yy;\text{verstijver}} \times 400^2 \right\} = 5,926 \times 10^{12} \text{ mm}^4$